

TMDLs for Fecal Coliform Bacteria

for Selected Subsegments in the Terrebonne Basin, Louisiana

(120101, 120102, 120104, 120105, 120109, 120111, 120112, 120201, 120206, 120301, 120502, 120503, 120504, 120506, 120507, 120508, 120602, 120605, 120606, 120701, 120703, 120707, 120708)

Fact Sheet

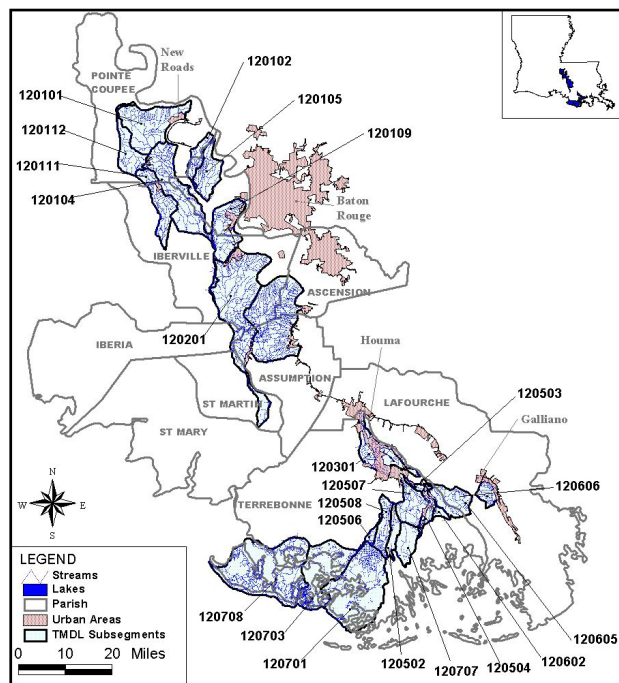


Figure 1. Location of the impaired subsegments in the Terrebonne Basin

Section 303(d) of the Clean Water Act and the U.S. Environmental Protection Agency's Water Quality Planning and Management Regulations require states to develop Total Maximum Daily Loads (TMDLs) for waterbodies that are not meeting water quality standards. A TMDL establishes the amount of a pollutant that a waterbody can assimilate without exceeding its water quality standard for that pollutant. TMDLs provide the scientific basis for a state to establish water quality-based controls to reduce pollution from both point and nonpoint sources to restore and maintain the quality of the state's water resources.

A TMDL for a given pollutant and waterbody is composed of the sum of individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background levels. In addition, the TMDL must include an implicit or explicit margin of safety (MOS) to account for the uncertainty in the relationship between pollutant loads and the quality of the receiving waterbody and may include a future growth (FG) component.

This fact sheet presents a summary of the TMDLs that have been developed for fecal coliform bacteria for 23 subsegments in the Terrebonne Basin in southeastern Louisiana (Figure 1). Louisiana Department of Environmental Quality (LDEQ) included the 23 subsegments in the Terrebonne Basin on the state's 2004 section 303(d) list for fecal coliform bacteria impairments (Table 1).

Table 1. Section 303(d) fecal coliform bacteria listings for subsegments in the Terrebonne Basin

Subseg. number	Subseg. name	Impaired use ^a	Suspected sources of impairment
120101	Bayou Portage	PCR, SCR	On-site treatment systems
120102	Bayou Poydras	PCR	On-site treatment systems
120104	Bayou Grosse Tete	PCR	On-site treatment systems
120105	Chamberlin Canal	PCR, SCR	On-site treatment systems
120109	Intracoastal Waterway	PCR	On-site treatment systems
120111	Bayou Maringouin	PCR, SCR	On-site treatment systems
120112	Bayou Fardoche	PCR, SCR	On-site treatment systems
120201	Lower Grand River and Belle River	PCR	On-site treatment systems
120206	Grand Bayou and Little Grand Bayou-	PCR, SCR	Municipal point source discharges, on-site treatment systems
120301	Bayou Terrebonne	PCR	Municipal, on-site treatment systems, package plant or other permitted small-flow discharges, sanitary sewer overflows
120502	Bayou Grand Caillou	SFP	On-site treatment systems, package plant or other permitted small-flow discharges, industrial point source discharges, total retention domestic sewage lagoons, marina/boating sanitary on-vessel discharges

Table 1. continued

Subseg. number	Subseg. name	Impaired use ^a	Suspected sources of impairment
120503	Bayou Petit Caillou	SFP	On-site treatment systems, package plant or other permitted small-flow discharges, total retention domestic sewage lagoons
120504	Bayou Petit Caillou	PCR, SCR, SFP	On-site treatment systems, package plant or other permitted small-flow discharges, total retention domestic sewage lagoons
120506	Bayou du Large	SFP	On-site treatment systems, package plant or other permitted small-flow discharges, total retention domestic sewage lagoons
120507	Bayou Chauvin	PCR, SCR	Municipal, total retention domestic sewage lagoons, package plant or other permitted small-flow discharges, sanitary sewer overflows
120508	Houma Navigation Canal	SFP	Source unknown
120602	Bayou Terrebonne	SFP	Municipal, municipal point source, marina/boating on-vessel discharges, package plant or other small-flow discharges, total retention domestic sewage
120605	Bayou Pointe au Chien	PCR	On-site treatment systems, package plant or other permitted small-flow discharges, total retention domestic sewage lagoons, wildlife other than waterfowl
120606	Bayou Blue	PCR	On-site treatment systems, package plant or other permitted small-flow discharges
120701	Bayou Grand Caillou	SFP	Source unknown
120703	Bayou du Large	SFP	On-site treatment systems, package plant or other permitted small-flow discharges, marina/boating on-vessel discharges
120707	Lake Boudreaux	SFP	On-site treatment systems, package plant or other permitted small-flow discharges, total retention domestic sewage lagoon
120708	Lost Lake, Four League Bay	SFP	Marina/boating sanitary on-vessel discharging, wildlife other than waterfowl

^aPCR = primary contact recreation; SCR = secondary contact recreation; SFP = shellfish/oyster propagation

The applicable numeric water quality criteria for fecal coliform bacteria, determined from the impaired uses, were used to calculate the TMDLs (Table 2).

Table 2. Water quality criteria for fecal coliform bacteria

Impaired use	Fecal coliform bacteria criterion ^a (colonies/100 mL)
Primary Contact Recreation (PCR)	400 (5/01–10/31)
Secondary Contact Recreation (SCR)	2,000 (11/01–4/30)
Shellfish/Oyster Propagation (SFP)	14 (median); 43 (10%)

^a*Primary contact recreation:* No more than 25 percent of the total samples collected monthly shall exceed a fecal coliform bacteria density of 400 colonies/100 mL from 05/01 through 10/31.
Secondary contact recreation: For all other periods, a fecal coliform bacteria density of 2,000 colonies/100 mL for secondary contact recreation applies.
Shellfish/Oyster propagation: The fecal coliform bacteria median MPN shall not exceed 14 colonies/100 mL, and not more than 10 percent of the samples shall exceed an MPN of 43 colonies/100 mL for a five tube decimal dilution test in those portions of the area most probably exposed to fecal contamination during the most unfavorable hydrographic and pollution conditions.

The TMDLs were calculated using an average load reduction approach. The approach calculated a percent reduction for each LDEQ monitoring station by using observed levels of constituents. The minimum percent reduction was calculated so that the monitoring data would meet water quality standards at that station. The percent reduction was applied to the entire subsegment. If two monitoring stations were present in a subsegment, the larger percent reduction was used to ensure that both monitoring stations will meet criteria.

In TMDL development, allowable loadings from all pollutant sources that cumulatively amount to no more than the TMDL must be established and thereby provide the basis for establishing water quality-based controls. WLAs were given to permitted point source discharges. The LAs include background loadings and human-induced nonpoint sources. An explicit MOS of 10 percent and an FG component of 10 percent were included. Using the applicable water quality criteria, most fecal coliform bacteria TMDLs were developed on a seasonal basis (i.e., calculating allowable loads and percent reductions for both summer and winter). Subsegments with oyster propagation as its designated use had fecal coliform bacteria TMDLs developed to apply year-round. A summary of the TMDLs for each of the subsegments is presented in Table 3.

Table 3. Summary of fecal coliform bacteria TMDLs, MOS, FG, WLAs and LAs for the Terrebonne Basin

Subsegment	Station	Season	Percent reduction	Total allowable loading	Explicit MOS (10%)	Future growth (10%)	Σ WLA	Σ LA
				1 × 10 ⁹ cfu/day				
120101	968	Summer	92.0	146.48	14.65	14.65	0.00	117.18
120101	968	Winter	87.5	732.70	73.27	73.27	0.00	586.16
120102	969	Summer	20.0	110.37	11.04	11.04	0.00	88.30
120102	969	Winter	0.0	176.64	17.66	17.66	0.00	141.31
120104	970	Summer	64.0	127.53	12.75	12.75	2.67	99.35
120104	970	Winter	0.0	660.00	66.00	66.00	2.67	525.34
120105	971	Summer	92.0	30.99	3.10	3.10	0.00	24.79
120105	971	Winter	0.0	68.96	6.90	6.90	0.00	55.17
120109	80	Summer	20.0	183.45	18.35	18.35	0.00	146.76
120109	80	Winter	0.0	355.97	35.60	35.60	0.00	284.78
120111	977	Summer	86.7	42.77	4.28	4.28	0.00	34.22
120111	977	Winter	0.0	51.24	5.12	5.12	0.00	40.99
120112	978	Summer	64.0	110.64	11.06	11.06	0.00	88.51
120112	978	Winter	16.7	893.61	89.36	89.36	0.00	714.88
120201	979	Summer	20.0	356.63	35.66	35.66	4.56	280.75
120201	979	Winter	0.0	752.72	75.27	75.27	4.56	597.62
120206	82	Summer	20.0	693.55	69.35	69.35	1.16	553.68
120206	82	Winter	0.0	1,993.61	199.36	199.36	1.16	1,593.74
120301	110	Summer	94.94	247.45	24.74	24.74	87.52	110.44
120301	110	Winter	60.00	488.74	48.87	48.87	172.49	218.50
120502	113	Year	96.69	1.34	0.13	0.13	0.00	1.08
120503	939	Year	95.33	0.35	0.04	0.04	0.20	0.08
120504	347	Year	98.21	0.97	0.10	0.10	0.44	0.23
120506	941	Year	91.40	0.69	0.07	0.07	0.00	0.55
120507	345	Summer	20.00	235.32	23.53	23.53	12.25	176.01
120507	345	Winter	0.00	229.95	23.00	23.00	11.97	171.99
120508	344	Year	81.30	3.88	0.39	0.39	0.00	3.11
120602	349	Year	98.21	0.73	0.07	0.07	0.08	0.51
120605	946	Summer	20.00	114.62	11.46	11.46	0.95	90.74
120605	946	Winter	0.00	75.85	7.59	7.59	0.63	60.05
120606	947	Summer	20.00	18.15	1.81	1.81	0.57	13.95
120606	947	Winter	0.00	20.22	2.02	2.02	0.57	15.61
120701	351	Year	30.00	26.99	2.70	2.70	0.00	21.59
120703	350	Year	89.23	18.44	1.84	1.84	0.00	14.76
120707	954	Year	74.71	3.98	0.40	0.40	0.00	3.18
120708	955	Year	81.30	19.90	1.99	1.99	0.00	15.92

For More Information

EPA seeks input on this proposed TMDL, including comments, information, and data from the general and affected public. For additional information on this TMDL project, please contact the EPA staff member listed below:

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